

Misleading Graphs

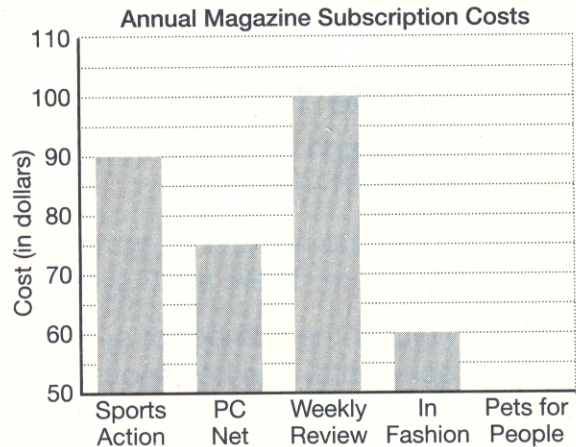
There are many ways to make a graph that can mislead a careless reader. One way is to start labeling the graph at a number other than zero without indicating that some numbers have been skipped. A graph can mislead by lengthening or shortening the space between data values in order to give a certain impression.

Example

Does *Sports Action* cost 4 times as much as *In Fashion*? Explain.

The bar showing the cost of *Sports Action* is about 4 times the length of the bar showing the cost of *In Fashion*. Look carefully at the scale along the left axis of the graph. Notice that the scale starts at \$50 so the first \$50 of each magazine subscription has been skipped. The graph is misleading.

The *Sports Action* subscription is \$90 per year. *In Fashion* costs \$60 per year. Since 90 is not 4 times as much as 60, *Sports Action* does not cost 4 times as much as *In Fashion*.



Try It

- a. *Weekly Review* looks like it costs 5 times as much as *In Fashion*.

What is the yearly cost for *Weekly Review*? _____ For *In Fashion*? _____

Does *Weekly Review* cost 5 times as much as *In Fashion*? Explain.

- b. *Weekly Review* looks like it costs _____ times as much as *PC Net*.

What is the yearly cost for *Weekly Review*? _____ For *PC Net*? _____

Is this a true or false impression? _____

- c. Add a bar to the graph to show that a new magazine, *Pets for People*, costs \$80 for a year's subscription.

- d. *Pets for People* looks like it costs _____ times as much as *In Fashion*.

Is this a true or false impression? _____

- e. What can you do to the graph so that it is not misleading?
